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Remarks on Blackleg as seen in County Armagh

G. A. KEATINGE, M.R.C.V.S.,

Portadown, N. Ireland

Blackleg or blackquarter has been rife in this part of County Armagh for many years. The farmers have recognised it as a scourge and many of them inoculate their young cattle, animals up to two years old, every year and in some cases every six months, with Blacklegoids. These inoculations have not always cut their losses but the fault in some cases has been associated with misapplication by the layman. In other instances inoculated young stock have died of blackleg within a few months or weeks of inoculation. This has led farmers to seek the services of their veterinary surgeon when deaths have occurred and during the past few years I have seen many cases in which the age of the animal and the symptoms exhibited contrasted with accepted descriptions. The purpose of this note is to draw attention to the occurrence of these unusual cases. In this county it is not uncommon to see blackleg in quite young calves and also in aged cattle and to find lesions in unusual sites.

In cattle up to two years old quite a percentage of cases show no *ante-mortem* symptoms, the animal being found dead on the grazing, probably behind a hedge or in a shallow drain, and its death is often not ascribed to blackleg but put down to "falling into a drain," etc. These cases generally show the classical "feathers in a silken bag swelling" when the carcase is examined. The lameness described as the chief *ante-mortem* symptom is not so characteristic as one would expect, but this is probably because the majority of cases seen in life have no limb lesion; those which have do not show great lameness. In my experience the muscles of any part of the body may be affected; the region of the submaxillary space and glands around the angle of the jaw, the side of the face and the neck are common sites. The masseter muscles on one side only may show a swelling which develops slowly and in these cases death may not supervene for several days. In the calf, one is occasionally called because the animal is hoven and the owner suspects choking. Although this may be the only symptom, the affected calf is often dead within two or three hours. The typical blackleg lesion is only found on *post-mortem* examination and may occur in such sites as the musculature over the transverse processes of the vertebrae or that of the abdominal wall. In only one such case have I been able to obtain a portion of the muscle lesion for examination and *Cl. chauvoei* was easily isolated.

The occurrence of these unusual features makes it necessary for one to be cautious in ruling out the possibility of blackleg in many cases. During the past summer I gave a cautious diagnosis of blackleg in a half-bred Friesian about five months old which exhibited a swelling which had started over the near eye and extended almost round the orbit and up to the region of the poll across the frontal bones. The swelling had the characteristic features, the temperature was over 105° F. and the calf was dead within two hours, having spent the last hour and a half of its life in what can best be described as convulsions. Unfortunately, owing to a misunderstanding, I was not able to perform a *post-mortem* examination. In another case a very young calf, not more than two months old, was found lying in some rushes on an extensive grazing. It could not rise and on being lifted could not support itself. The near fore leg hung loosely from the shoulder and swung easily. On manipulation I believed I heard crepitus and this, together with the manner in which the limb was carried, made me suspect a fracture. By the following morning this was a classical case of blackleg and although the near fore limb was, curiously, somewhat improved, the calf was very lame.

In view of the generally accepted idea that blackleg does not occur in animals over two years old it is often difficult to have the farmer accept that diagnosis and three cases which have recently occurred in my practice are worthy of record.

Case No. 1: On a Sunday evening, at about 7.30, I was called to see a half-bred Shorthorn cow, five years old, barren and in fair condition. She was standing in the end stall of the byre, very uneasy; her respirations were greatly increased, she was snoring and constantly moving the jaws wtih profuse salivation. Examination failed to show the presence of any swelling or emphysematous condition of the musculature, but the attempt to examine the submaxillary space and the neck led to her charging the wall, attempting to climb the side wall and being generally violent and vicious. Each attack lasted just a minute or two and I did suspect blackleg. Two ounces of chloral hydrate were administered in two pints of cold water but had no effect. The animal became progressively worse, the periods of frenzy became more frequent, more severe and lasted longer. The animal was so violent by 2 o'clock the following morning that the owner had her destroyed. On *post-mortem* examination there was little naked-eye abnormality even in the regions which appeared so sensitive during life, but from a portion of the neck muscle *Cl. chauvoei* was isolated.

Case No. 2: I was asked to attend a freshly calved (second calf) Jersey cow, it being reported that she had swallowed an apple and was choking. The message reached me at 8.30 a.m., to be followed by a second as I was leaving to attend the case at 8.45; the cow was dead. At a subsequent visit to the farm I learned that the cow had given her usual quantity of milk on the previous night and had been turned out to pasture apparently quite normal. A superficial examination of the carcase showed nothing of note, but when the skin was incised with the object of looking for the apple the musculature was rather dark in colour and there was a faint, sour smell. No foreign body could be found and blackleg was suspected. *Cl. chauvoei* was readily found in material sent for bacteriological examination.

Case No. 3: I was called to see a red half-bred Shorthorn cow, 10 years old, at 9.30 a.m. The owner informed me that on the previous evening she had been taken for service to a farm one mile from his premises and was in her usual health at 11 p.m. The following morning she was unable to rise. When I saw her I got her to her feet, found her temperature to be 103° F. and that apart from a disinclination to feed she appeared normal. There was, however, a swelling almost suggesting that a tennis ball had been inserted underneath the skin mid-way between the buttocks and the hock joint in the middle line of the near hind leg. My first impression was that she had been horned by another cow. Never have I seen a swelling increase in size so quickly; one could see it rising. When I left the cow at 10.15 a.m. the swelling was about five times its original size and very suggestive of blackleg. At 12.45 p.m. the whole of the hind quarter was considerably enlarged, it was emphysematous, crackled and very typical of the disease. The cow could not rise. I advised destruction but the owner would not agree and the animal died at 7 p.m. Laboratory examination of a specimen showed in smears "the presence of numerous spore bearing organisms similar to *Cl. chauvoei*" and the opinion was expressed that this appeared to be a case of blackquarter.

Since I have seen several other cases in adult cattle which, although laboratory evidence was lacking, were typical clinical cases of blackleg, I cannot but conclude that this disease occurs in mature cattle more frequently than is generally believed and that some caution is necessary in many cases before concluding that they are not due to *Cl. chauvoei* infection. I would express my appreciation of the assistance I have had from the officers of the Veterinary Research Division at Stormont, Belfast, in connection with these cases.

Parasitic Worm Diseases

DISCUSSION BY THE SOUTH WALES VETERINARY ASSOCIATION

[In our issue of January 10th, 1942 (*V.R.* **54,** 15-17) we published an address by Dr. E. L. Taylor entitled "The Epidemiology of Parasitic Bronchitis in Cattle." This address, which was given to the meeting of the Ayrshire Division, N.V.M.A., held at the Hannah Dairy Research Institute, Ayr, on June 18th, 1941, formed the basis of a contribution by Dr. Taylor on "Parasitic Worm Diseases" at a special meeting of the South Wales Division, N.V.M.A., held at Carmarthen on November 28th, 1941. Below we reproduce a report of the discussion which took place on the latter occasion.—*Editor.*]

The discussion was opened by the reading of a letter from Mr. Railton, of Builth, who expressed his surprise that *post-mortem* examinations so frequently showed neither gastritis nor the presence of parasites in the stomach. It was his opinion that the parasites were picked up in large numbers from aftermath and clover.

Mr. Reynolds expressed regret that Dr. Taylor had not dealt with treatment and asked his opinion on the value of intra-tracheal injection.

Dr. Taylor, replying, said that it was a common experience to fail to find evidence of gastritis on *post-mortem* examination and it remained something of a mystery as to how the parasites actually killed the beast. It had been suggested that they produced a toxin and also that they caused death by interfering with digestion.

Some of the worms were very small, and although they might be present in very large numbers in the stomach, unless a very careful examination was made they might be missed. He could not agree that aftermath gave a high infestation of parasitic worms.

He had purposely omitted mention of treatment, as he knew that it would come up in the discussion. He held the opinion that intratracheal injections were of little or no use and that there was not at the present time any effective treatment for husk.

Dr. Taylor mentioned that he was now trying out the intra-tracheal injection of a special suspension of phenothiazine and pointed out the differences between injection of a substance into the trachea during inspiration and during expiration. Indian ink injected on inspiration could be seen on *post-mortem* examination evenly distributed throughout the lung, but if injected on expiration the indian ink was carried up into the throat, there being a very rapid movement of air along the trachea of an animal during ordinary respiration.

His hope for phenothiazine in intratracheal medication lay in its great toxicity for helminths and its great insolubility—it might remain in the lungs for a considerable time and kill the worms.

Mr. W. Davies and Mr. A. Parry asked if it was safe to graze young stock immediately after adult cattle. Mr. Parry said he had experience of this type of husbandry, and found that the young stock developed a severe infestation, and the system had to be abandoned.

Dr. Taylor said that adult cattle could act as carriers of these worms without showing symptoms, but that the egg output was small, and so it should be relatively safe to let young cattle follow adult cattle. The chief danger lay in allowing young stock to remain for a long time crowded together on a small area of pasture.

Mr. Ascott mentioned that where a system of intensive grazing was adopted, it was the custom to chain-harrow immediately the change was made, with the object of spreading the dung and causing maximum manuring of the land. He thought that under these conditions many more larvae would hatch out than if the cow pads were allowed to lie undisturbed. This would give the young stock a heavy infestation from which to graze.

Mr. J. Campbell Hill, who thanked Dr. Taylor for what he described as his simple yet lucid address, observed that the subject was interesting and important and the ravages caused by these worms were very real: they were responsible for considerable losses to the whole community. He was of the opinion, however, that the chief cause governing the incidence of these diseases was overcrowding and other factors in bad husbandry. Mr. Hill looked forward to the day when he could read and digest the address in *The Veterinary Record.*

Mr. Hall, of Barry, asked Dr. Taylor if salt marshes were ever infested with parasitic worms. Some of his clients had access to these areas and they were never troubled with parasitic diseases.

Dr. Taylor regarded this as interesting, but he did not think the concentration of salt on the marshes was sufficient to inhibit the development of the larvae of worms responsible for parasitic gastritis. It was different in the case of liver fluke, however, as the snail (*Limnaea truncatula*) could not survive on salt marshes.

Mr. T. R. Thomas inquired of Dr. Taylor if he thought 1941 had been a bad year as far as parasitic gastritis and husk were concerned. They had had a lot of trouble with both this year, having had more deaths this year from parasitic diseases than ever before, and this they attributed to a small hay crop and the fact that many farmers fed their cattle heavily on straw.

Dr. Taylor said that in explanation he would like to suggest that there had been a shortage of grass during the summer of 1940; the animals would then have to cover more ground to get the same quantity of grass and the concentration of larvae per pound of herbage would be much greater when herbage was short than when it was plentiful. He also believed that farmers fed their store cattle chiefly on straw during the winter, thus giving them little help to combat the effects of the parasites. He was of opinion that these cattle would improve with nicotine and copper sulphate treatment, or as a result of treatment with the new drug, phenothiazine.

Mr. F. V. John thanked the President and Secretary for calling that special meeting and Dr. Taylor for coming to address them. Dr. Taylor's work was especially valuable as he always approached it from the practical aspect. The subject was of tremendous importance to the live stock industry because the cost of rearing was so high and early maturity so essential that any factor which retarded development was a serious matter.

Many people believed that ploughing would have the effect of lessening parasitic diseases but he thought that it might well operate in the opposite direction, because with the high cost of mature animals more farmers would go in for rearing and this would have to be done on a reduced acreage, so that infestation would be increased. Further, there was the food factor: young stock could not be fed as they were pre-war, and this would tend to diminish the animal's resistance. This year had been a particularly bad one and he thought it was largely due to the dry autumn of the previous year, when with the scanty herbage available, stock had to graze all day to satisfy themselves and so they started off the winter with a heavy infestation of worms. The effect of these was increased by the poor feeding during the winter, thus causing a high mortality during the spring.

He had spoken before of his disappointment that the Survey Committee had not included parasitic worm diseases in their "Short-term Policy." Their exclusion was on the ground that control of these would have no immediate effect on milk production. They had included contagious abortion, control of which could not show any results for at least nine months, while here was a group of diseases whose control would show tangible results in a couple of months, and would ensure the early entry of a large number of heifers into the milking herd. He would therefore beg the Survey Committee to reconsider their decision or, failing that, to start an independent campaign against parasitic diseases. The trouble was that the practitioner was never called in until symptoms were well advanced and no treatment could save the animals. If farmers were impressed with the need for early treatment, then much good would have been done.

He was very grateful to Dr. Taylor for showing them the technique of egg counting, but he questioned the value of egg counts. They had been told that the number of eggs seen had to be multiplied by 100, and so any small initial error in counting or technique was multiplied by that figure and might give a totally wrong idea of the infestation. Again the number of eggs passed depended on so many factors that the number at a single examination was of little use.

He held the view that all young stock in a backward condition and scouring could be treated for parasitic infestation without waiting for laboratory confirmation.

He was sorry that Dr. Taylor had not dealt more fully with treatment because that was the aspect with which the practitioner was most concerned. Medicinal treatment had to be augmented by the prevention of further infestation. This would only be satisfactorily done by bringing the animals up from grass, and he believed it was necessary to tie them. He wondered if th

practice of bringing them in to open yards was wise, as he thought that the bed of fodder and dung might be a suitable breeding place for the parasites. He had noticed that in a recent experiment some of the cattle had given higher egg counts at the end of a period in an open shed than at the beginning. He would like Dr. Taylor's opinion on this.

With regard to treatment, Mr. Jones and he had been using tetrachlorethylene with marked success. The dose employed was 7-20 c.c. in oil, preceded by 2 oz. of 1 per cent. copper sulphate solution. As a preventive of both gastro-enteritis and husk it had given excellent results when used monthly through the late summer and autumn. On several farms which were troubled every year, the young stock had this year grazed out from early summer without showing any symptoms of either condition. It had also given good results as a curative agent.

Mr. John concluded by saying that he thought that the rational way of dealing with husk was to attack the parasite while it was still in the intestines. He had found intratracheal injection of no value; in fact, it usually led to a septic pneumonia. He believed it was true to say that a very small concentration of phenothiazine in faeces would inhibit development of larvae, and he wondered if daily minute doses of this drug would have a disinfectant action on the faeces.

Dr. Taylor, replying, said he was very interested in the contribution on the probable effects of the General Ploughing-up Campaign. He agreed entirely. It seemed that one effect would be a greater crowding of cattle on pasture and we should probably have more trouble from parasitic gastritis than before. He agreed also that this year had been a bad one for parasitic bronchitis: it had been extremely serious in the Midland counties. Strangely enough, it had been a very good year for parasitic gastritis in sheep: they had been trying to get hold of severely affected flocks for experiment and had great difficulty in finding any. Much work had yet to be done in connection with the relationship between climatic condition and the incidence of parasitism. Drought and shortage of pasture increased parasitic gastritis, but with husk the reverse was true.

He could not agree that egg counting was of no value. Although the egg count depended on so many factors, the difference in the count of normal and affected animals was so great as to be of great assistance in arriving at a diagnosis.

With regard to the question of housing animals during the winter and the possible effect of bad hygiene, he thought there was little danger of re-infestation from the bedding. Many of his experimental sheep at Weybridge were kept in pens, and if he wanted to be absolutely certain that there could be no re-infestation, the pens were cleaned every two days. On the other hand, if this precaution was not taken the amount of reinfection which then occurred was very slight indeed.

With reference to the suggestion that small doses of phenothiazine might have lethal effects on the worms, early work had suggested this method of control and the research workers had even envisaged the use of anthelmintic medicated cake. Trial, however, gave little promise of effect. Referring to the suggestion that the husk worms might best be attacked in the stomach and intestines, on their way to the lungs, he thought there would be still less prospect of succeeding here, since the larvae only remained in that situation for a very short time and, in order to kill all of those invading the body, even if the anthelmintic should prove fatal to them, it would be necessary for it to be present in the stomach and intestinal contents for weeks and months at a time.

Mr. Pugh, of Newport, said he came from a district where husk was very prevalent, especially in the low lying districts. He had never seen husk on hill farms.

Mr. Pugh, of Swansea, disagreed with the previous speaker: he had often seen husk on farms at a high altitude. He would like to ask Dr. Taylor how long he considered larvae would live in hay harvested from infected pastures.

Dr. Taylor said it was well known that it was possible for hay to be infested with nematode larvae, this point having been particularly well established with equine strongyles. Some of the stomach worms of sheep and cattle could also withstand the hay-making process and it was unlikely that husk worm larvae had a similar power of resistance although this did not seem to have been studied specifically. One thing was certain, however—that the numbers of larvae surviving were not great and were unlikely to be adequate for disease causation.

Mr. T. H. Jones thanked Dr. Taylor for his valuable and interesting address. He felt that egg counts had a limited value because there were so many factors influencing the interpretation of results:—

1. One might get a heavy infestation with immature worms that had not reached the egg-laying stage. He understood some strongyles did not reach sexual maturity until they were three months old. He would imagine that much harm had been done to the host before the presence of the worms was established by microscopical examination.

2. Nature and amount of food taken. Inappetence increased the number of eggs in a given quantity of faeces considerably; likewise, if food was changed from grass or hay to concentrates.

3. Immunity respose of host. They were told that adult cattle, by their immunity, retarded the egg-laying capacity of the worms, and that young cattle were known to lay 16 times more than the resistant adults.

Another factor which, to the ordinary practitioner, made egg counting of doubtful value was the importance of distinguishing the various parasites by their eggs. It was known that some parasites were much more pathogenic than others. It was most important that if practitioners were to practise egg counting they should be able to say which species of worms they found in a given sample.

He would like to know whether the Advisory Committee of the N.V.M.A. on parasitic diseases was still functioning. They had promised to publish photographs of the various parasitic ova.

As regards treatment by tetrachlorethylene, he was rather surprised that no one had appeared to have used this agent except his partner and himself. They were indebted to Mr. Hall Masheter for this treatment and for several years now they had very seldom used anything else for husk or parasitic gastritis. They had no laboratory tests to check their findings but, clinically, the results were very satisfactory.

He disagreed with Mr. Hill that overcrowding and bad husbandry were chiefly responsible for worm infestation.

Would Dr. Taylor inform them of the dose of phenothiazine for cattle 12 to 18 months old?

Dr. Taylor replied briefly, and said that one always had to bear in mind the many factors—as enumerated by the last speaker—when examining faeces for worm eggs. It was known that the egg production of some familiar worms was completely inhibited for several days after the host had received treatment. There certainly was a difference between the eggs of the various worms and it was important to be able to recognise the species in a given infestation because they would respond to different treatments.

The Advisory Committee of the N.V.M.A. on parasitic diseases was, he believed, still in existence; steps had been taken towards the collection of suitable photographs of helminth eggs, but since the outbreak of war the activities of the Committee had been curtailed. He was very interested to hear of the good results obtained by tetrachlorethylene. He knew that it had been used with some success in Australia. He thought that 40 to 60 grammes of phenothiazine was a suitable dose for cattle of 12 to 18 months. If the animals were indoors and not exposed to re-infection one dose should be sufficient, but if at grass on heavily infected pastures, the dose should be repeated in 1 to 2 months time.

Mr. Steele-Bodger said he would like to add his thanks to those already expressed to Dr. Taylor. Dr. Taylor was one of a very fine team who worked together at the Ministry's Laboratories. He was interested in someone's remarks that adult cattle were seldom infested with parasitic worms. He had seen a lot of this trouble in adult stock and it was not always due to undernourishment. He believed that malnutrition was a great productive factor, but the very best rearer of young stock in his district had had all the herd down with husk this year.

With regard to the Channel Island breeds, he could confirm their susceptibility. He had had a herd of pedigree Guernseys, all of which had husk this year. He would like to defend one thing said about the Survey Committee. The Committee were told that they must increase the yield of milk and they had to consider the diseases which had the most direct bearing on milk supply. They had, however, discussed diseases of calves and were going to discuss parasitic diseases with a view to bringing out something in the nature of preventive treatment.

He was very grateful for the privilege of coming to Carmarthen to hear Dr. Taylor.

Mr. Watson said that he had seen a number of calves which had never been out and had only received a hay diet, contract parasitic bronchitis so severely that a large proportion of them

died. There was no doubt about the diagnosis because the *post-mortem* examination showed the bronchi to be full of mature worms. Symptoms developed as early as six weeks after birth. He had also had an unusual experience with a bunch of steers. They were brought in to be fattened at the end of the summer, and appeared quite normal. One died suddenly in three weeks and four more showed pneumonia—all died within two days and their lungs showed bunches of the worms in the bronchi.

He wondered what the source of infection was in these cases. He would also like to know how long the worms lived in the host—would the worm picked up in August be still there in March and April ?

Dr. TAYLOR said that these cases were of great interest. Before one could be sure of the source of infection, very careful inquiries had to be made with regard to movements and management of the stock. In the case of open yards there were often little tufts of fresh grass about some small dung heap or water channel. These were often very heavily infected with larvae and their ingestion might lead to very heavy infestation. As an alternative explanation, he would like to point out that the husk worm takes six weeks to mature, so that Mr. Watson's steers might have picked up the infection before they came in.

There was an interesting point that Channel Island cattle appeared particularly susceptible to husk. On inquiring, he had found that there were no husk worms on the Channel Islands so that the resistance of the race to these parasites had sunk to a low level and, as a result, they usually developed a heavy infestation when the chance arose.

With reference to the longevity of worms, it had been proved that certain worms in the human lived for as long as 30 years, and that available facts suggested that the worms go on living until immunity or medicines drive them out.

NEED FOR A SOUND POST-WAR POLICY FOR AGRICULTURE

In an article entitled "Agriculture After the War"* Sir John Russell states that the British peace-time diet requires on the average 1·6 acres to produce, so that 60 per cent. of our food has to be imported. We now have to aim at getting nearer to the 1·1 acres that suffice for the German dietary. After the last war agriculture was left to stand on its own feet against world competition—a course which was quite unfair to the British farmer. Writers and politicians now become very penitent about their past attitude to agriculture and there is widespread recognition that British agriculture must be maintained, after the war, at a sufficiently prosperous level to attract and retain a vigorous and intelligent body of farmers and farm-workers. After the last war farmers met the situation in the only way they could, by laying down land to grass or by extensive mechanisation, both of which expedients had great disadvantages.

There is a grave danger that the same situation will arise again after this war but fortunately a number of people are trying to design alternative solutions. The chief conclusion appears to be that the land will have to be regrouped into larger and more economic units and it has been suggested that to do this the State would have to purchase the whole of the agricultural land of the country, provide the appropriate buildings, and make the necessary reclamations before letting it to farmers.

The prime need, however, is for a definite agricultural policy, and a decision as to the amount of the various foods which we should aim at producing at home. As the largest buyers of agricultural produce in the world, we are in a position to exert a very potent influence on post-war economy in a large number of countries, and our influence will be good if we work out a proper plan and stick to it. The contract price system, already successfully adopted for some products, is essential now that wages are fixed, and it may be advisable to concentrate more on the "fresh protective foods" as we have a natural advantage for their production.

The important part that science must play in agriculture is stressed, but there are great difficulties to be overcome due to the different mental attitudes of the research worker and farmer. At the present time there is an unfortunate and curious decrying of science by some agricultural writers. The serious problems involved in the relation of science to agriculture require fuller study.

* Nature. **149.** 12-14.

ABSTRACTS

[TREATMENT OF EXPERIMENTAL TUBERCULOSIS. HINSHAW, H. C. and FELDMAN, W. H. (1941.) *J. Amer. Med. Ass.* **117.** 1066-1068.]

Guinea-pigs inoculated with a lethal dose of human tubercle bacilli were treated with promin (sodium *p.p'*-diaminodiphenylsulphone-N.N'-didextrose sulphonate) by daily administration in the food. All the untreated controls developed widespread fatal tuberculosis, while 60 per cent. of the treated animals had no gross lesions. The lesions found in the remainder had retrogressive changes with no caseation. Fibrosis was frequent, sometimes with encapsulation. Calcification was also observed.

The drug has been given to human tuberculous patients but its effect on the course of the disease is not discussed.

W. M. H.

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[STUDIES ON ACID-FAST BACTERIUM FREQUENTLY PRESENT IN TONSILLAR TISSUE OF SWINE KARLSON, A. G. and FELDMAN, W. H. (1940.) *J. Bacteriol.* **39.** 461-472.]

A saprophytic acid-fast organism with some antigenic relationship to the avian type of tubercle bacillus was recovered from the tonsils of 26 pigs out of 94. The organism caused no serious lesions when injected in large doses into chicken, mice, calves, guinea-pigs or rabbits. Injection sensitises the animal to avian but not to mammalian tuberculin.

P. S. W.

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[MODE OF INFECTION WITH ACTINOMYCES. SAVAGE, A. and ISA, J. M. (1941.) *Cornell. Vet.* **31.** 314-316.]

A brief and illustrated description is given of a case of actinomycosis in the lip of a cow and the reader is left to judge whether the evidence presented in this case is in accord with the present commonly accepted view or whether it supports Bostroem's original observations regarding the aetiology of actinomycosis. Bostroem maintained that the *Actinomyces* was frequently to be found on certain grain and that infection was acquired through eating infected grain. The present view is that there is no evidence in support of this contention as *Act. bovis* has never been demonstrated on grasses or grains.

In this case report illustrations are presented showing the presence of awns in the tissues with colonies of *Actinomyces* attached, and the writers consider that this evidence regarding the presence of awns in the tissues provides at least a partial rebuttal of the modern view. [It should be noted by the reader that the mere presence of these awns is not in conflict with the modern view nor does it afford any proof as to the origin of infection. It is commonly accepted that *Act. bovis* is a common member of the flora of the mouth and pharynx and that such foreign bodies as awns merely carry the infection from the mouth into the tissues. Although a somewhat similar species of *Actinomyces* is sometimes parasitic on grain there is no evidence that *Act. bovis* leads a saprophytic existence outside the body.—*Abstractor.*]

G. D.

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[AN IRRITANT FOR UDDER TISSUES PRODUCED BY MASTITIS STREPTOCOCCI IN MILK. POUNDEN, W. D. and ZEHNER, C. E. (1941.) *Cornell. Vet.* **31.** 382-388.]

The authors have made tests on one dry cow free from streptococcal infection and on three others in various stages of streptococcal mastitis to determine if an udder tissue irritant can be formed *in vitro* by mastitis streptococci grown in milk. The "whey" for injecting the udders was prepared by inoculating aseptically-drawn milk with *Str. agalactiae* isolated from two of the cows to be tested and incubating at 37° C. for two days. The whey was collected through sterile gauze and the *p*H was 4·4. In one case milk in which streptococci had been incubated for 21 hours, was used before it had separated into curds and whey.

Painful inflammatory reactions were produced when these mixtures were injected by way of a teat syphon into various quarters of the four cows. Boiled whey was as irritant as unheated whey and the resulting reaction was almost proportional to the amount injected. The effects produced in one

cow are described in some detail and figures are given showing the variations in milk yield, catalase, chlorine and *p*H during the period of reaction (four days). It is suggested that the increase in *p*H of the milk, which was noted soon after injection of the whey, indicates a mobilisation of alkaline reserves to counteract the excess acid, a process which may be one factor of importance in recovery in natural cases of acute mastitis. It is concluded that the syndrome produced in the manner described is similar to, if not identical with, acute streptococcal mastitis.

C. V. W.

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[SODIUM BIFLUORIDE AND SODIUM SILICOFLUORIDE IN THE DISINFECTION OF HIDES. Manthel, C. A. and Eichhorn, A. (1941.) *J. agric. Res.* **63**. 41.]

Sodium bifluoride and sodium silicofluoride were tested for their ability to destroy the virus of vesicular stomatitis, both in infected guinea-pig pads soaked in a solution together with calf skin, and in calf skin inoculated intradermally with fresh material after one guinea-pig passage. The ratio of skin to soak solution was 1 to 5 by weight, and experiments were carried out at room temperature. Both compounds, in a dilution of 1 in 10,000, destroyed the virus in 24 hours. The margin of safety appeared to be slightly greater in the case of sodium bifluoride, for sodium silicofluoride, 1 in 20,000, failed to destroy the virus in 48 hours, while the bifluoride was successful under these conditions. The *p*H value of the soak solution was initially 3·5-3·8, rising after 24 hours to 4·6-6·0 and at 48 hours to 5·0-6·2.

J. B. B.

"EGG REDUCTIONS ON SPECIALIST PLANTS MADE GOOD ON THE FARM"

The above inference is drawn in an announcement by the official Press service from St. Andrew's House, Edinburgh, from figures now available to the Scottish Department of Agriculture. In the course of this, we are reminded that the fact that we are lucky if we get one egg per week is not the fault of the hen, nor of those who tend her. "The trouble is that war conditions impose serious limitations on the availability of the feeding stuffs normally used for poultry and other stock and thus it was that a rationing scheme had to be devised with, of course, a scale of priorities for the different classes of stock, based partly on their value as economical converters of raw material into human food. Although this scale has not been accepted by all scientists, poultry, with pigs, were placed low on the scale and the ration, amounting to 3 oz. per bird per day, was originally available for only one-third of the number of birds shown on the Agricultural Returns of June, 1939, the allocation later being reduced to one-sixth of the number kept in that year. Reductions in flocks were therefore inevitable, especially in those run on specialist lines. From figures now available to the Department, though, it would appear that the situation in Scotland is not quite as bad as might have been expected, in as far as numbers are concerned; and the inference is that the reductions on specialist plants have to a large extent been made good on the farm. Apart from the difficulties of the specialist, this may not be a wholly bad trend; in fact there is much good in it as broad acres provide conditions which conduce to sound health and there is no doubt as to the value of poultry in improving the fertility of the land. Farmers would be well advised, then, at this stage, to make sure that they are laying the foundations for still further expansion on right lines when conditions return to normality. The demand for eggs will always exist, and, on dietetic grounds, it is right that it should be so. Dr. Halnan of the Animal Nutrition Institute, Cambridge, draws attention to the value of the egg in its iron and vitamin D content as well as in its digestibility. He also points out that the hen is, in fact, a most economical converter of feeding stuff protein to human food protein, being in this respect only second to the dairy cow.

"It may be thought that insufficient attention has been paid in official quarters to these facts but one thing is certain—everything possible is being done to prevent a worsening of the position."

REVIEW

[BRITISH AGRICULTURE: THE PRINCIPLES OF FUTURE POLICY. Viscount Astor and B. Seebohm Rowntree. Pelican Special, No. 38, pp. 284. Penguin Books Ltd., Middlesex. (Condensed, and brought up to date, from "British Agriculture" published by Longmans and Green, 1939).]

Any fundamental changes in the complex structure of British agriculture would produce far-reaching repercussions on our own industrial population and on the great food-producing countries of the world, and it is for this reason that it is so difficult to devise an agricultural policy which will fit into the general economic structure of the country and at the same time give the British farmers and farm workers reasonable reward for their labours. The whole subject is also apt to be clouded by a great deal of sentiment and prejudice.

This book will therefore be particularly welcome to all serious students of agriculture because it contains the main findings and conclusions of a scientific, and therefore objective investigation into all aspects of British agriculture—the subject is considered throughout against the background of world economic conditions.

Most of our arable crops reach the consumer as animal products and the over-riding importance of livestock in British agriculture is continually stressed, as is the importance of grass as the chief fodder crop, and the necessity for further research in the management of grassland.

The only way by which British agriculture can regain the leading position it once held is through greatly increased efficiency, which can be achieved by a vigorous programme of research and the application of the results obtained to agricultural techniques. The amount of money devoted to research is far too small and even this is badly apportioned, for less than half goes to livestock production which is the most important section of British agriculture.

Much more veterinary research is required to lessen the ravages of disease in our livestock and the farmer needs much more veterinary and other specialist advice. The losses from disease reduce the life of dairy cows to such an extent that 10 per cent. of our total herd replacements come from Ireland, and it would probably be preferable to aim at producing a lower yielding and longer living cow instead of the short-lived high-producing type.

The next great advance—a social one—should be the provision of an adequate diet for all members of the population and to further this aim British agriculture should be devoted more to the production of "the fresh protective foods" such as vegetables and, above all, milk. To provide sufficient milk a greater cow population will be required and some means will have to be found of reducing the cost of milk to the consumer. The constitution of the Milk Marketing Board, on which there is no consumer representation, is severely criticised and various alternatives are suggested.

Subsidies are probably necessary, but they are dangerous because they tend to perpetuate existing types of farming even when changed conditions make fundamental changes in the whole structure of agriculture essential. They would probably produce less opposition from the public if they were devoted to raising the general standard of human nutrition and the fertility of the land.

The provision of a higher standard of living for agricultural workers, including the possibility of rising to higher posts, *e.g.*, of the executive type, is essential to prevent the migration of the most intelligent and energetic farm workers into the towns. Greater mechanisation of agriculture is also necessary and for these reasons it is felt that farming should be carried out in larger units. There will also probably have to be some form of guaranteed price for most agricultural products.

The old landlords played an important part in the development of agriculture, but research is now too complex to be prosecuted by individuals, and private enterprise is no longer capable of executing the necessary tasks of land development. "The logic of the agricultural facts," therefore forced the authors to conclude that a *gradual* nationalisation of the land will have to be carried out.

Already in certain districts one can see development of larger farming units, and under the pressure of war conditions some large tracts of land have been taken over by the Government. The general trend of agricultural development and of road transport indicates that the number of commercial horses will

steadily decline, whilst the dairy cow will become more and more important. The necessity for importing a large proportion of our dairy herd replacements from abroad is surely a challenge to the veterinary profession, and there are a number of immediate steps which can and no doubt soon will be taken to reduce the losses from disease. In the long run, however, it is probable that the most important single action that could be taken to reduce these losses in our dairy herds would be to give the cow, instead of the horse, the place of prime importance in veterinary teaching. The veterinary profession would then be qualified to make a worthy contribution to an improvement in human nutrition after the war.

IN PARLIAMENT

The following are among the questions and answers recently recorded in the House of Commons—

Horses and Ponies in Mines

Sir R. Gower asked the Secretary for Mines whether, in any programme of post-war planning, he will consider the desirability of giving effect to the following suggestions for the improvement of the conditions of horses and ponies employed below ground in mines; a single shift per day for horses and ponies as for miners; suitable lighting of underground stables to give daylight effect and a diffused supply of fresh air from inlets placed at suitable intervals; proper lighting of junctions and bends of roadways; pony-drivers to be over 16 years of age and carefully trained; the provision of standard heights and widths for horses and ponies on all haulage roads along which they must travel; the affixing of approved electric battery lamps to the collars or bridles of each horse or pony while at work; and the provision of a pool of reserve horses and ponies, properly trained, for groups of collieries for use in emergencies?

Mr. Grenfell: Yes, Sir, these suggestions have been noted for consideration.

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Colonial Development and Welfare Schemes

Mr. Creech Jones asked the Under-Secretary for State for the Colonies whether any statement will be issued setting out the scheme submitted by the Colonial Governments under the Colonial Development and Welfare Act?

The Under-Secretary of State for the Colonies (Mr. Harold Macmillan): A return of schemes made under the Colonial Development and Welfare Act in the period ended March 31st, 1941, was presented to the House on December 16th. Periodical statements regarding the progress made in granting assistance to Colonial Governments under the Act will no doubt be issued in the future, but it is too early to say at what intervals they could most conveniently be produced.

Mr. Creech Jones: Will the Minister publish the schemes submitted by Governments and not those adopted under the Act?

Mr. Macmillan: I will consider that.

PIG BREEDING IMPROVEMENT IN SCOTLAND

The Department of Agriculture for Scotland announce that they are prepared to offer financial assistance to livestock breeding societies in Scotland for the purpose of improving the standard of pig breeding. Grants will be offered to societies that own or arrange for the use of approved boars of the Large White, Large Black and Middle White breeds for the service of sows belonging to their members. The grants will be at the following rates:—

	Boars that have passed the tuberculin test.	*Other boars.*
(a) First year of premium ...	£6 0 0	£5 0 0
(b) Second year of premium ...	£4 10 0	£3 15 0

The tuberculin test must have been carried out within three months preceding the date of application.

Full particulars of the Scheme may be obtained from the Secretary, Department of Agriculture for Scotland, St. Andrew's House, Edinburgh, 1.

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Feb. 25th.—Annual General Meeting of the Lancashire Division, N.V.M.A., at Manchester, 2.15 p.m.

Feb. 26th.—Annual Meeting of the West of Scotland Division, N.V.M.A., at Glasgow, 2.45 p.m.

Feb. 26th.—Annual General Meeting of the Lincolnshire and District Division, N.V.M.A., at Grantham, 2 p.m.

Mar. 4th.—Annual Meeting of the Scottish Metropolitan Division, N.V.M.A., at Edinburgh, 2.30 p.m.

Mar. 5th.—Meeting of the Central Veterinary Society at the Conway Hall, Red Lion Square, W.C.1, at 2.30 p.m.

Mar. 7th.—Meeting of the Society of Women Veterinary Surgeons, at Liverpool, 2.30 p.m.

Apr. 1st.—R.C.V.S. Annual Fees due.

Apr. 16th.—R.C.V.S. Committee Meetings, Hotel Russell, London.

Apr. 17th.—R.C.V.S. Committee and Council Meetings, Hotel Russell, London.

May 11th.—R.C.V.S. Animal Management Examination begins.

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Retention of Female Employees by Veterinary Surgeons

Many members of the Association have enquired of the General Secretary concerning the future of their female staff following the coming into operation of the provisions regarding the calling-up of women under the National Service (No. 2) Act, 1941, and the Registration for Employment Order. It being clear from these approaches that without female assistance such as is afforded by secretaries, dispensers, kennelmaids and domestic servants it would be impossible for many veterinarians to carry on their practices, and prompted also by the appearance in the national Press of an announcement giving the impression that the female employees of certain professional men—the veterinary surgeon being among those listed—are to be exempt from call-up, on January 26th the Secretary drew the attention of the Ministry of Labour and National Service to these points and enquired if such employees of veterinary surgeons would, in fact, be allowed to remain in their present occupations.

The Ministry's reply, received on Monday last, stated: "The reservation mentioned in your letter only applies to veterinary surgeons and does not include unqualified persons, who, if unmarried, and aged 20 or 21 at date of registration are liable to be called up under the National Service Acts. It will, however, be open to the employer to apply for the deferment of calling-up of his employee on the ground of her special qualifications, or that she occupies a pivotal position in his establishment. Such applications will be considered by the District Man Power Board.

"Applications for the retention of women considered for transfer under the Registration for Employment Order may be made to the Local Office. Applications for deferment or retention need not be made until receipt of form N.S.52W or form E.D.378W from the Local Office."

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Refresher Tuition in Bovine Pregnancy Diagnosis and Treatment for Infertility

The attention of Members is again drawn to the following list of the names of the "Instructors" appointed to carry out refresher tuition as above in the under-mentioned areas respectively allocated to them:—

J. N. Bowen, M.R.C.V.S.—Bedfordshire, Huntingdonshire and Northamptonshire.

J. A. Brown, M.R.C.V.S.—Dumfriesshire, Lanarkshire, East-West-and-Midlothians, Clackmannanshire and Fifeshire, Stirlingshire and Dunbartonshire.

F. T. Day, F.R.C.V.S.—Cambridgeshire, Norfolk and Suffolk.
W. L. Dwerryhouse, M.R.C.V.S., D.V.S.M.—Essex, Hertfordshire, London and Middlesex.
T. N. Gold, M.R.C.V.S.—Cheshire and Lancashire.
G. N. Gould, M.R.C.V.S.—Leicestershire, Staffordshire and Warwickshire.
S. Jennings, M.R.C.V.S.—Cornwall and Devon.
R. D. Mackintosh, B.V.Sc., M.R.C.V.S.—Argyllshire, Ayrshire, Buteshire and Renfrewshire.
J. McWilliam, M.R.C.V.S.—Angus, Kincardineshire, Aberdeenshire and Inverness-shire.
H. W. Steele-Bodger, M.R.C.V.S.—North and South Wales.
C. Weighton, M.R.C.V.S.—Berkshire, Buckinghamshire, Hampshire and Oxfordshire.

If there are any other members of the profession desirous of receiving this refresher tuition who have not yet sent in their names, it is still not too late to send them *now* to the General Secretary, N.V.M.A., 10, Bore Street, Lichfield, Staffs.

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PERSONAL

Mrs. R. C. G. Hancock's Accident.—The many friends of Major R. C. G. Hancock, President-Elect of the N.V.M.A., and Mrs. Hancock, of Beaconsfield, who heard with deep regret and concern of the serious accident which befell the latter on February 7th, will be greatly relieved to learn that she is now making satisfactory progress in the King Edward VII Hospital, Windsor. Mrs. Hancock, who had for long been busily engaged as a driver for the St. John Ambulance Brigade and Transport Officer for the local A.R.P. Services, having paid a call in her ambulance in the former capacity, slipped and fell heavily, sustaining a compound fracture of the tibia and fibula. She was taken in the ambulance to hospital, where a considerable period of grave anxiety followed her collapse while under anaesthesia for the treatment of the fracture. Happily, Mrs. Hancock is now out of danger, but several months must elapse before recovery is complete.

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Colonial Veterinary Service.—Mr. George Norman Alfred Hall, O.B.E., M.R.C.V.S., Dr. Med. Vet. (Zür.), whose award of the O.B.E. for veterinary services in the Gambia was announced in the New Year Honours List, has been promoted Chief Veterinary Officer, Gambia.

The appointment in the Colonial Veterinary Service is announced of Mr. J. C. Alley, M.R.C.V.S., as Veterinary Officer, Nigeria.

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R.C.V.S. OBITUARY

Caudwell, William, F.R.C.V.S., St. Gratien, 70, Lowther Road, Bournemouth. Graduated London, April 1st, 1880. Fellowship July 26th, 1887. Died February 8th, 1942; aged 85 years.

Hinton, John William Melvill, 85, London Road, St. Leonards-on-Sea. Graduated London, December 21st, 1921. Died January 23rd, 1942; aged 42 years.

Holden, George Bayne, 18, Penpol Terrace, Hayle, Cornwall. Graduated N. Edinburgh, December 20th, 1892. Died March 14th, 1941; aged 74 years.

McCubbin, William John, Veterinary Officer, Negri Sembilan, Federated Malay States. Graduated London, December 20th, 1935. Died January, 1942; aged 32 years.

McGregor, Gregor, "Ranfurly," 24, Central Avenue, Cambuslang, Lanarks. Graduated Glasgow, April 28th, 1884. Died February 8th, 1942; aged 79 years.

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Mr. J. W. M. Hinton, M.R.C.V.S.

His colleagues in South-East England, who held him in much affection and esteem, will deeply regret to learn of the death of Mr. John W. M. Hinton, who collapsed and died suddenly at Bexhill while attending a case. Mr. Hinton was a valued member of the area Divisions, N.V.M.A., and local papers pay tribute to his work amongst the animal-owning community of Hastings, St. Leonards and district, to whom his passing brings a great sense of loss, for he was an able practitioner, genial and patient.

Mr. Hinton served with the Seaforth Highlanders during the last war and was badly gassed before being taken prisoner. He was in a prison camp in Germany for four months and when he returned to England his health was seriously impaired, as the gas left his heart badly affected. After his war service Mr. Hinton completed his College course and went to St. Leonards to take over the practice he was holding at the time of his death. Breeders and exhibitors will miss his cheery presence at the Eastbourne, Hastings and District shows, where he was a familiar figure. He was a keen Pekingese enthusiast and for many years a great supporter of the breed in the South. He will be greatly missed as veterinary surgeon for the local R.S.P.C.A., and as Divisional Veterinary Officer of the National A.R.P. for Animals Service.

Mr. Hinton leaves a widow and a widowed mother, both of whom live at London Road, St. Leonards, and deep sympathy is extended to them in their bereavement.

The funeral took place on January 30th at the Borough Cemetery, the Rural Dean (Canon C. C. Griffiths) officiating.

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Mr. W. J. McCubbin's Death in Singapore

We record with the deepest regret that news has been received that Mr. W. J. McCubbin, B.Sc. (Agric.), M.R.C.V.S., Veterinary Officer, Malaya, has been killed at Singapore. The only son of Mr. and Mrs. John McCubbin, of Edinburgh, he was educated at Daniel Stewart's College, where he played in the Stewartonians' Rugby team. He secured his B.Sc. (Agric.) at Edinburgh in 1932, in which year he was awarded a four years' scholarship by the Colonial Office, and from there proceeded to London, where he qualified as M.R.C.V.S. He was appointed to the Malayan veterinary service in 1936. Latterly he had been on loan to the Johore Government. Mr. McCubbin was home on leave two years ago. Profound sympathy is felt with the parents thus tragically bereaved.

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GRADING OF UNDER-FED ANIMALS TO CEASE

The Ministry of Food announce that, forthwith, any cattle or sheep presented for grading at a collecting centre, which, in the opinion of the certifying authority, are in store condition or pregnant and should be kept on, will not be accepted for purchase by the Ministry if the feed conditions are such that there is a market at reasonable prices for store stock. "This grading of under-fed cattle for the meat market has been going on too long," comments *The Farming News*, "and the same applies to in-calf cows; since the removal of the ban on the importation of Irish cattle it has been notorious the number of really store stock which were being removed to the slaughterhouse, and the grading of pregnant cows has only tended to restrict unnecessarily the scope of cattle-breeding in the country." The procedure now announced is a reversion to the practice followed before last spring.

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STERILITY OF BROOD MARES AND STALLIONS

Commenting on the work undertaken at the experimental stud farm which was set up by the Thoroughbred Breeders' Association at Stetchworth, near Newmarket, in 1928, with the object of making expert investigation into causes of sterility of brood mares and stallions, *The Sporting Life* observes: "This stud farm was financed by the Association. Owners of high-class brood mares which had become irregular producers took advantage of the facilities offered, and notable results were achieved. A part of additional grants was used for the purchase and keep of some pony mares for experimental work. Included in the work performed with these ponies were experiments made concerning gonadotrophic hormone, which is present in the blood of mares at certain stages of pregnancy. This hormone is used in medical and veterinary science, and before the war all supplies came from Continental countries. When supplies from these sources were impossible to obtain, as a direct result of the original work on the ponies purchased and maintained by the Thoroughbred Breeders' Association, in the care and charge of Mr. F. W. Day, F.R.C.V.S., the Association was able to plan and organise the expert collection of the hormone from wild mountain ponies in this country. This work was carried out in 1940 and again in 1941. It may thus eventually create an industry from the mares of pony breeds."

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There has been no extension of the outbreaks of foot-and-mouth disease recently confirmed amongst cattle in Lanarkshire. On Tuesday last it was announced that an outbreak of the disease had been confirmed among cattle at Inverurie, Aberdeenshire.

H.M. STATIONERY OFFICE PUBLICATIONS

The undermentioned have been published recently. Copies can be purchased through any bookseller, or directly from H.M. Stationery office.

	Price net s. d.	Post free s. d.
AGRICULTURE AND FISHERIES, MINISTRY OF:		
Bulletin 124. The Composition and Nutritive Value of Feeding Stuffs. (By H. E. WOODMAN, M.A., PH.D., D.SC.). January, 1942. (24-204-24-42).	0 6	0 7
STATUTORY RULES AND ORDERS, 1942:		
106. Meat Feeding Stuffs (Control and Maximum Prices) Order, 1941. Order, January 21st, prescribing an Appointed Day	0 1	0 2

CORRESPONDENCE

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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PRACTICAL TRAINING OF VETERINARY STUDENTS

TO THE EDITOR OF THE VETERINARY RECORD

Sir,—On March 29th, 1941, you kindly published a letter from me in which I referred to the desire of the Council to interest as many members of the profession as possible in the scheme for the extra-mural training of veterinary students in the practical side of their studies. In that letter I explained that students were finding it increasingly difficult to fulfil the conditions of the Byelaws which require them to present certificates showing that they have attended cases of disease and/or accident and have had experience in general practice among the larger farm animals over a period of not less than six months. The letter included an appeal to members to help to the utmost of their ability in giving facilities to students to see such practice.

In November last I issued to practitioners a circular explaining in detail the scheme of extra-mural training, and asked that members should indicate to me on a form supplied whether they would be prepared to assist in the scheme. Unfortunately less than 200 members responded, and there are at least three times that number of students for whom facilities for seeing practice are required.

May I, therefore, make a further appeal to practitioners who have not already done so to send me their names if they are willing to receive students during the vacations and give them opportunities of gaining experience of veterinary practice among farm animals. A copy of the form of questionnaire will be supplied on application.

INSURANCE. I am now able to announce that a scheme of insurance has been arranged whereby practitioners can insure themselves against any liability they may incur for injury to pupils whilst carrying out duties under the direction of the practitioner. The National Veterinary Benevolent and Mutual Defence Society has taken out on behalf of its members a block policy of insurance with Messrs. S. H. Cannon & Co., Insurance Brokers, to cover members against claims made by a pupil under the Workmen's Compensation Acts, and at Common Law. For the purpose of the Workmen's Compensation Acts the maximum salary assumed to be paid to the student has been computed at £60.

An annual payment to the Society of one guinea per pupil will cover the whole or part of any year from January 1st to December 31st.

It is hoped that this insurance scheme will have the effect of encouraging a larger number of practitioners to give in their names as being willing to help students to secure that practical training which everybody agrees is so essential.

Practitioners who are not already Members of the Defence Society are strongly advised to join and so to become entitled to the above-mentioned insurance benefit. The entrance fee is only £1 1s. 0d. and the annual subscription is 10s. 6d. For this modest payment practitioners are covered against all claims for negligence which may be made against them by litigious clients, and for the additional payment of one guinea they will be insured against the liability of compensation to students who may suffer injury while carrying out the instructions of the principal.

The Secretary of the Society is Major F. Hopkin, M.R.C.V.S., 35, Manchester Road, Knutsford, Cheshire, from whom all further particulars may be obtained.

Yours faithfully,
FRED BULLOCK,
Secretary,
Royal College of Veterinary Surgeons.

18, Victoria Avenue,
Harrogate, Yorks.
February 16th, 1942.

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MILK FEVER AND ALLIED DISEASES

TO THE EDITOR OF THE VETERINARY RECORD

Sir,—The article on above subject in your issue of January 24th, by Mr. Weighton, of Lincoln, was both concise and interesting. I was hoping, however, some allusion would have been made to another allied condition, *viz. ante-partum* paralysis. In the spring of 1940 this condition was widespread in Southern Ireland and losses were enormous.

The previous dry summer, followed by a hard winter and spring, may have been an exciting factor, with chlorophyll in the burnt pastures conspicuous by its absence, suggesting that "*refugium pecatorum*" vitamin deficiency. The condition usually appeared in cows from three weeks to a week before calving. Poor condition could not always be blamed as some cows were in quite good order. Inflation, calcium and magnesium and glucose therapy appeared to have no effect: spinal rubefacients or the procurement of abortion, ditto. A few cows did respond to a course of nux vomica, often pushed, incorporated with sodium chloride and treacle in bolus, but on the whole treatment was hopeless. The disease is always to be feared in this country especially after snow and hard weather in the early spring. It is treated in a rather perfunctory and hopeful manner by most textbooks and one would be glad to know if Mr. Weighton or any other colleague could add to our truly little knowledge of the pathology and treatment of this very real and prevalent spring disease of the parturient bovine.

Yours faithfully,
C. P. HYNES.

Lismore,
Co. Waterford.

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THE STUDENT OUTLOOK

TO THE EDITOR OF THE VETERINARY RECORD

Sir,—In her Presidential Address to the Society of Women Veterinary Surgeons, Miss Joshua would have it that the only thought in the mind of the average student is of "getting through," and that the subject of veterinary politics is, to him or her, an unopened book.

That is very far from the truth. Miss Joshua may only have started to think about such things after she graduated, but to most of us, the future of veterinary science, and the part it could, and should, play in the national economy, are matters of great concern. If Miss Joshua were to come to Liverpool, or any other Veterinary College, she would realise that students are concerned, and not a little worried about all that "veterinary politics" implies, as the report of the Conference of Veterinary Students held last July would show. If apathy towards these problems is to be found, it is not among students.

Yours faithfully,
A. CARLYLE,
Secretary,
Liverpool University Veterinary Society.

School of Veterinary Science,
Bedford Street North.
February 3rd, 1942.

WEEKLY WISDOM

"*You stiffen your backbone and you listen to the night. There is a sense of danger. It is not the people. They don't seem dangerous. Out of the very air comes a sense of danger. Something has happened. Something has happened which has not yet eventuated. The old spell of the old world has broken, and the old bristling, savage spirit has set in . . . and it is a happening of far more profound import than any actual event. It is the father of the next phase of events.*"—T. E. LAWRENCE during a visit to Germany, 1923.